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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/490,259	01/24/2000	G. William Ragland	002004-219	6933

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EXAMINER

COMPTON, ERIC B

ART UNIT PAPER NUMBER

3726

DATE MAILED: 06/11/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/490,259

Applicant(s)

RAGLAND ET AL.

Examiner

Eric B. Compton

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 16-22 and 54-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9, 16-22 and 67-71 is/are allowed.
- 6) ☒ Claim(s) 54-66 and 72-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17, 18.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 54, 55, 56, 57, 60, 61, 63, 64, and rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,785,931 to Maus et al.

Regarding claims 54, and 63, Maus et al disclose a method of forming a multi-layered foil product by providing a continuous stack of metal foil layer (see Figure 17). They further disclose, "Referring to FIGS. 17 and 18, of which the former schematically shows an apparatus for producing a honeycomb body, one corrugated strip 4 and one smooth strip 3 are delivered to the apparatus. A stamping device 60 stamps striplike parts out of the strips 3 and 4 from the edges 39 inward, only a narrow web 65 (FIG. 18) in the longitudinal axis of the strips 3 and 4 remains. ... Accordingly, a stack is formed by alternating from smooth and corrugated sheet metal layers" (col. 12, lines 5-20). Figure 17, shows a z-fold (zig-zag) stack. It is disclosed that a various combinations of corrugated and flat sheets can be used, including a plurality of each (see col. 4, lines 54-67).

Regarding claims 55, and 56, if two or more corrugated layers are used then one previously patterned layer is combined with another previously patterned layer.

Regarding claims 57, and 64, Maus et al provide a corrugated layer (3).

Regarding claim 60, as shown in Figure 18, the cut-outs, i.e., creasing sites (9) are only at the edges of the stack.

Regarding claim 61, the cut-outs may be considered perforations across the width.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 58, 62, and 65, are rejected under 35 U.S.C. 103(a) as being unpatentable over Maus et al.

Maus et al disclose the invention cited above, but not all the particulars claimed by Applicant.

Regarding claims 58, and 65, Official Notice is taken that fiber layers are known to be associated with multilayered metal products in the art. Therefore, it would have been obvious to provided the product of Maus et al with a fiber layer, in light of the teachings of the Official Notice taken, in or to produce products similar in construction as those known in the art.

Regarding claim 62, Maus et al disclose that in the art it is known not to rotated

Regarding claim 62, Maus et al disclose that it is known in the art to form a stack alternating in a zig-zag fashion as discussed US Patent 4,647,435 to Nonnenmann (relied on in the previous Office Action), having a crease in one layer ('435, FIG. 9). Therefore, a skilled artisan would be able to select the creasing type to make folding more efficient, and to do so does not constitute an inventive step.

5. Claims 59, 66, and 72-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maus et al in view of 4,711,009 to Cornelison et al.

Maus et al disclose the invention above. However, they do not explicitly disclose the creasing and scoring means as claimed.

Cornelison et al. discloses a folding apparatus (see Figure 12). The invention teaches forming perforations along a strip such that the varying or the folds can be controlled, e.g., periodically rotating the folding rolls (col. 7, lines 15-45). "The coining operation is performed alternatively on either side of the strip 10 so that fold creases are coined into the strip to form the zig-zag strip form 12 exiting from the station L. The device shown in FIGS. 9-12 includes a pair of rollers mounted on parallel axis. These rolls each have a knife edge and a resilient pad mounted 180° apart. Means are provided for sharply moving the rolls together with the strip 0 in the nip between the superimposed rolls which causes the knife to move into the resilient pad a distance sufficient to crease the strip 10 at the point of impact" (col. 12, lines 29-40). "The movement of the rolls together is one command which originates either from an electric eye sensing a hole punched through the strip 10 at the computer controlled punching station E as describes above or from a signal from the encoder" (col. 12, lines 47-51).

Regarding claims 59, 66, and 72, it would have been obvious to one of ordinary skill in the art, at the time of invention, to have performed the method of Maus et al using by periodically activated rotating creasing members, in light of the teaching of Cornelison et al, in order to varying the length of the folds for any particular application essentially on the fly (col. 7, lines 15+).

Regarding claims 73-74, Maus et al disclose that a various combinations of corrugated and flat sheets can be used, including a plurality of each (see col. 4, lines 54-67).

Regarding claim 75, Maus et al provide a corrugated layer (3).

Regarding claim 76, Official Notice is taken that fiber layers are known to be associated with multilayered metal products in the art. Therefore, it would have been obvious to provided the product of Maus et al/Cornelison et al with a fiber layer, in light of the teachings of the Official Notice taken, in order to produce products similar in construction as those known in the art.

Regarding claims 77-80, these particulars are inherently taught by the creasing system of Cornelison et al.

Allowable Subject Matter

6. Claims 1-9, 16-22, and 67-71 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 1-9, and 16-22, the prior art of record does not teach or suggest a method of forming a multilayered metal foil product; comprising providing a continuous stack of metal foil layer, separating the layers, recombining the layers, and forming and cutting individual products, in combination with the other claimed subject matter. Based on the specification a stack is disclosed to comprise z-folds (or zigzags) as shown in reference numeral (23) in Figure 1.

Regarding claims 67-71, the prior art of record does not teach or suggest a method of forming a multilayered metal foil product; feeding to a parts forming operation a continuous previously pattern multilayered stack of spaced apart metal foil layers from a z-fold pack, and forming and cutting individual multilayered metal foil parts from the z-fold pack, in combination with the other claimed subject matter. Based on the specification a stack is disclosed to comprise z-folds (or zigzags) as shown in reference numeral (23) in Figure 1.

Response to Arguments

8. Applicant's arguments filed April 23, 2003, have been considered but they have not been found fully persuasive.

Applicant's arguments are moot with respect to the new grounds of rejections. Maus et al disclose the invention cited above.

Claims 67-71 have been allowed.

Although, multilayered products are known to be formed in the art, the folded product itself is the multilayered product, such as for a catalytic converter. Applicant's invention relies in the process of first forming a continuous previously pattern multilayered stack of spaced apart metal foil layers in a z-fold pack, and subsequently forming individual multilayered metal foil parts from the z-fold pack.

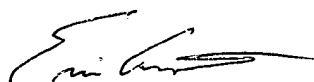
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (703) 305-0240. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory M. Vidovich can be reached on (703) 308-1513. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



Eric Compton
Patent Examiner
A/U 3726

June 5, 2003